

**Bonneville Power Administration
Fish and Wildlife Program FY98 Watershed Proposal Form**

Section 1. General administrative information

Title **Trout Creek Habitat Restoration Project**

Bonneville project number, if an ongoing project 9404200

Business name of agency, institution or organization requesting funding
Oregon Department of Fish and Wildlife

Business acronym (if appropriate) ODFW

Proposal contact person or principal investigator:

Name Ray Hartlerode
Mailing Address 3450 W 10th Street
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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
none			

NPPC Program Measure Number(s) which this project addresses.

7.1, 7.1D, 7.1D.1, 7.6, 7.6A, 7.6A.2, 7.6B.1, 7.6B.2, 7.6B.3, 7.6B.6, 7.7, 7.8, 7.10, 7.10.K.1 AND FROM SCIENTIFIC REVIEW: 2,21,22,28,29

NMFS Biological Opinion Number(s) which this project addresses.

Although there has not yet been a final decision regarding the petition to list Columbia River Steelhead. This project would help address "Biological Option" determinations related to habitat and natural production of winter steelhead.

Other planning document references.

Support comes from the Trout Creek Watershed Council which is comprised of 7 of the 13 largest landowners in the basin. Four of the six major landowners not participating

in the watershed council already have entered into BPA riparian leases. Also support comes from government agencies such as the Jefferson County Soil and Water Conservation District, and from nongovernmental organizations like Oregon Trout.

Subbasin.

Trout Creek Subbasin including the following tributaries: Tenmile, Sagebrush, Ward, Antelope, Little Trout, Boardhollow, Foley, Dutchman, Biglog, Cartwright, Potlid, Opal, Auger

Short description.

Restoration and Enhancement of instream and riparian habitat condition and complexity. Protection of instream and riparian habitat. Proactive education and demonstration of good management practices in the entire Trout Creek basin.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction	X	Watershed
*	Resident fish	X	O & M		Biodiversity/genetics
	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate	*	Monitoring/eval.		Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	*	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

-NA-

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9306600	Oregon Fishscreens, /Trout Cr. Passage Project	Share manpower, equipment, and facilities

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Maintain and inspect existing riparian corridor structures.	a	Annually inspect all riparian fencing. Depending on livestock, wildlife, weather, and other factors inspect riparian areas with heavy livestock use at least one a week. Repair damage to fence as soon as feasible.
2	Maintain and inspect existing instream and bank stabilization structures	a	Annually inspect all instream and bank stabilization structures. Repair structures as soon as feasible.
3	Monitor stream temperatures and stream flows	a	Attempt to document stream temperature changes attributable to riparian and instream channel recovery.
4	Utilize existing manpower to attempt leveraging existing BPA funds with other funds to accomplish additional basin wide goals.	a	Work with Private landowners, NGO's and the Trout Creek Watershed Council to develop projects and to locate additional funding sources.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	1/1998	12/1998	55.00%
2	1/1998	12/1998	34.00%
3	5/1998	11/1998	1.00%
4	1/1998	12/1998	10.00%
			TOTAL 100.00%

Schedule constraints.

none

Completion date.

Project riparian leases expire in 2009. After 2009, if the current land use patterns are present, this project will need continued funding at current level to maintain fencing and structures beyond that year.

Section 5. Budget

FY99 budget by line item

Item	Note	FY98
Personnel		\$108,457
Fringe benefits		\$42,298
Supplies, materials, non-expendable property		\$46,775
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		\$1,570
Indirect costs		\$45,900
Subcontracts		\$5,000
Other		
TOTAL		\$250,000

Outyear costs

Outyear costs	FY99	FY00	FY01	FY02
Total budget	\$256,550	\$271,555	\$282,060	\$295,563
O&M as % of total	89.00%	89.00%	89.00%	89.00%

Section 6. Abstract

A This project is an operating "on the ground" project that has accomplished instream and riparian habitat improvement. Livestock riparian exclosures on over 70 miles stream has benefited stream bank integrity and has contributed to increased riparian vegetation density, health, and vigor. Installation of several thousand instream structures within the Trout creek basin has also served to decrease actively eroding streambanks and has contributed to increasing the instream habitat complexity.

B With the funding requested for fiscal 1998 the project goals are to maintain and continue the ongoing improvement to the Trout Creek watershed This will be accomplished by continuing to maintain and repair the existing structures and fencing. Additional goals include working with the interested parties in the basin to leverage BPA

funds with other granting sources to accomplish additional watershed wide habitat enhancement projects.

C This project address the hypothesis that human alteration to the salmon bearing ecosystem has contributed to the decline in salmon and steelhead. In the September 10, 1996 Return to the River document this hypothesis showed to have, "Thoroughly established, generally accepted, good peer-reviewed empirical evidence". In attempting to alleviate the human alterations this project has sought to addresses habitat restoration on a basin wide approach utilizing the results obtained from 1984 survey to guide efforts where the greatest benefit will be realized. This approach is also regarded in the 1996 "Return to the River" as "Thoroughly established, generally accepted, good peer-reviewed empirical evidence".

Salmonid populations in this basin are naturally reproducing and past hatchery stocking has been minimal. In section 7.1 in the 1994 CPFWP the policy states, "To conserve, manage and rebuild the basin's remaining wild and naturally spawning populations, a policy giving such populations explicit priority is needed." This project addresses this policy through basin wide habitat restoration. In section 7.6 the policy states that restoring degraded habitat in areas where there are naturally reproducing salmonid populations it is necessary to increase the amount of fish surviving to reach smolt size. Additional sections of the 1994 CPFWP plan related to this project include: 7.7 cooperating with private landowners, and 7.8 Initiating actions where water quality standards are not met. Since this project is related tied to the fish passage project section 7.10K.1 continued funding of fish screening and passage into historic habitat also applies.

D The approach to this project is based on the sound principal that if we can remove and or reduce some of the anthropogenetic factors to habitat degradation the habitat condition will improve and, consequently, so will fish populations. The two methods that have been largely incorporated are installation of riparian cattle exclosure fencing, and installation of various instream structures. The purpose of these structures includes; bank stabilization, reduced sediment input, increased habitat complexity, stabilizing head cuts, and increasing water storage capacity in meadows. Scientifically it could be argued as to what and where structures were placed. However given the constraints both socially and politically no one can argue with the benefit that has occurred, and will continue to occur.

E The expected outcome is to reduce sediment input, increase riparian shading, reduce summer stream temperatures, improve instream habitat complexity, and increase late season flows. The time frame for the desired outcome for each component is variable. Some areas of the project have already made marked improvement. But there are some areas both inside and outside the leased areas that will need either more time for recovery, or some additional type of restoration effort (this includes addressing problems in the uplands). Areas that are in need of recovery outside of the BPA riparian leased ground are being addressed via the Trout Creek Watershed Council (Asst. Project Leader is an active participant). Additional projects inside and outside the riparian leased areas will be identified for habitat restoration. Any potential funding sources will be investigated and cost sharing opportunities thoroughly investigated.

F One of the frustrations on this project has been the historical lack of funding to implement monitoring and evaluation on the work that has been accomplished. There is scant baseline or post implementation data. Now that emphasis has been placed on

monitoring the results of BPA projects there is a need to review the work that has been accomplished. Due to the time constraints of this application a monitoring proposal for fiscal year 1998 has not been finalized, but for fiscal year 1999 there will be a monitoring and evaluation proposal submitted for this project.

Section 7. Project description

a. Technical and/or scientific background.

The Trout Creek project is an ongoing Central Oregon fish habitat restoration project. This offsite BPA mitigation project is designed to restore, improve, or maintain riparian and instream habitat to increase the number of adult summer steelhead spawners returning to the Trout Creek system. An ancillary goal is to increase the resident redband trout populations. This project will also benefit wildlife by providing increased cover and forage along the improved riparian areas. In the 1984 study of the Trout Creek basin habitat problems were identified as limiting steelhead and redband production. This project addresses the poor riparian and instream habitat quality and quantity, as identified in the study. Logically for any native fish recovery there needs to be an adequate quality and quantity of habitat to sustain native fish populations over time. This is being accomplished through the following:

Riparian exclosure fencing

Total Miles	132
Miles of Stream Fenced	70

Instream Structures

Rock Jetties	272
Rock Rip Rap	1,533ft.
Juniper Rip Rap	18,110ft.
Rock Weir	236
Log Weir	189
Habitat Boulders	3,353
Large Woody Debris (LWD)	498
Spring Development	11

Current funding helps to maintain these "in place" structures. While this has greatly assisted the meager native salmonid populations there remains a large quantity of work to be accomplished in regard to instream and riparian restoration. Additional streams need better livestock, and timber management. Sediment input from logging roads needs to be addressed, and several areas throughout the basin are in need of additional habitat work. The greatest challenge to a significant recovery involves irrigation water withdrawal. This problem affects almost every stream in the arid Western United States. The related fish passage project will address some of the fish passage issues, and this will provide us an

opportunity to discuss with landowners methods of increasing efficiency in water delivery systems, and possibly consolidating water withdrawal sites. Personnel funded by this project will assist in identifying and implementing these opportunities. Also personnel funded by this project will assist and coordinate the augmentation of the current BPA habitat project through other granting sources.

b. Proposal objectives.

- 1) Provide unobstructed passage for migrations of adults and juveniles to achieve full utilization of suitable habitat.
- 3) Maintain an average maximum summer water temperature of 75 F or less at the mouth of Trout Creek.
- 4) Provide healthy riparian vegetation on at least 80% of the perennial stream miles in the drainage.
- 5) Increase habitat diversity by increasing pool habitat to historical levels.
- 6) Within the constraints of land use practices, achieve <20% active stream bank erosion.
- 2) Provide technical assistance to landowners to reduce the amount of sediment delivery from upland sources.
- 7) Achieve water quality standards that will comply with the clean water act, or assist in establishing a plan that will bring the basin into compliance.
- 8) Maintain work that has been completed over the past 11 years.

c. Rationale and significance to Regional Programs.

This program is designed to enhance wild summer steelhead in the Columbia Basin. Habitat restoration of this type will help to avoid a steelhead listing in the Central Columbia Basin ESU.

d. Project history

Trout Creek is the uppermost eastern tributary in the Deschutes River basin below the Pelton–Round Butte complex. The headwaters of Trout Creek are in the North slope of the Ochoco Mountains north of Prineville, and generally flows north through the communities of Ashwood and Willowdale. Trout Creek is approximately 60 miles long and enters the Deschutes River at river mile 88. The Trout Creek watershed covers

approximately 750 square miles, and there is an additional 80 stream miles of major tributaries.

The Trout Creek watershed has historically been overgrazed, heavily channelized and diverted for irrigation withdrawal, and extensively managed for timber production. This has resulted in severe flood damage, low summer flows, high summer stream temperatures, increased sediment delivery, and habitat simplification.

The Trout Creek project began in 1982. The first phase of the project was a three year survey of the entire basin to determine the feasibility of restoration efforts in the basin. The survey analyzed cost/benefit ratios and habitat enhancement possibilities. On the ground construction began in 1986, and continued until about 1991. Since 1993 the project has concentrated on maintaining the existing work. Recently, additional effort has been placed in acquiring funding from other sources to complete supplementary projects in the basin.

Within the last year the basin has formed a Watershed Council that is comprised of landowners throughout the basin along with several other agencies. Besides ODFW other agencies that are involved with the watershed council and/or have assisted in on the ground projects include: Oregon Trout, Oregon Water Trust, Jefferson County SWCD, ODFW Restoration and Enhancement, ODFW Access and Habitat, Bureau of Reclamation, Governor's Watershed Enhancement Board, US Forest Service, National Marine Fisheries Service - Mitchell Act Funds, and Fisheries Across America.

e. Methods.

To maintain and continue the upward trend in the riparian conditions throughout the BPA riparian leased areas we will maintain and inspect existing riparian corridor fencing at least annually. Depending on livestock use, wildlife, weather, or other factors we will inspect riparian areas that are suspect at least one a week. Repair to damaged fence will be completed as soon as feasible. Also we will annually inspect all instream and bank stabilization structures. Repair structures will be completed as soon as time and funding permits. Work with private landowners, NGO's and the Trout Creek Watershed Council to develop projects and to locate additional funding sources will continue. Development of a watershed wide habitat/restoration priority list is currently being developed. This will help in directing future projects to further enhance summer steelhead and resident redband trout populations in the basin.

The methods and funding for evaluating this project have routinely been denied (except for a minor temperature monitoring program which consists of 1/2 of 1% of our total operation budget). This project would be extremely excited if funds were available to conduct some basic monitoring and evaluation. This might include; smolt monitoring, riparian and

instream surveys, expanded spawning redd surveys, and linking redd counts to areas of restoration to name only a few. We will develop and submit a monitoring and evaluation proposal for the 1999 fiscal year.

f. Facilities and equipment.

Facilities:

Office space 800 sqft
Shop space 700 sqft
Yard space 3000 sqft

Of this space BPA only pays for ½. Federal Mitchell Act picks up remainder.

Equipment

3 Vehicles (2 - ¾ ton trucks, 1 S10 blazer)
3 ATVs (1986 Honda, 1987 Yamaha, 1986 Polaris)
2 Computers
2 Printers
Wood post driver
Rock drill
Power Auger
Camera

g. References.

Northwest Biological Consulting 1983. Trout Creek Restoration. Project No. 83-423. Phase 1 Final Report. Bonneville Power Administration, Portland, Oregon.

Section 8. Relationships to other projects

This project will help to coordinate and develop additional projects with several NGO's and various other state and federal agencies (i.e. Oregon Trout, SWCD, Trout Creek Watershed Council, BOR, Water Resources, OSP, DOF, BLM, USFS, Corps of Engineers, et.al.). Also there are additional projects that have been jointly developed with the Watershed council, SWCD, and ODFW. Our manpower and technical expertise has been instrumental in assisting the development of further restoration efforts in the basin.

This project also works with and shares resources with the Fifteenmile habit restoration project located in The Dalles, and the NE Oregon Screens Project (Project 093-66). Personnel, equipment, facilities, and expertise from the Trout Creek Habitat project and the Mitchell Act project are utilized in execution of these two projects.

Section 9. Key personnel

<u>Personnel</u>	<u>Title</u>	<u>Department</u>	<u>FTE</u>
Alan (Chip) R. Dale	Special Program Leader	ODFW	0.125

No Resume available

Ray Hartlerode	Project leader	ODFW	0.33
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Education

1979 – 1983 Oregon State University; Corvallis, Oregon
Degree: B.S. in Fisheries Science

Training

AFS Riparian Restoration Workshop
NMFS Fish Passage and Diversion Structures Training
State of Oregon DAS Core Curriculum Training for Managers and Supervisors
Northwest Fish Screening and Passage Workshops

Experience

1991-Present, Oregon Department of Fish & Wildlife; Project Leader on Fifteenmile, Trout, and Buckhollow Creek Habitat Restoration Projects. Project Leader on N.E. Oregon Screens Trout Creek Passage Project, Project Leader for NMFS Mitchell Act Fifteenmile/Trout Creek Fish Screens Project.

Duties

Fiscal management of project budgets, supervision of project personnel to implement and maintain fish habitat projects, preparation of proposals, works statements, contracts, leases, and reports, coordination of habitat projects with other agencies and organizations performing conservation programs in the watershed, Identifies stream reaches with altered habitat conditions that lack necessary habitat types to sustain natural production of fish populations, determines appropriate fish habitat restoration/improvement actions, negotiates with government and private landowners for cooperation and permission to conduct habitat restoration projects, develops program direction in the form of standards and guides for all regional habitat programs; including, but not limited to, Bonneville Power Administration (BPA) National Marine Fisheries Service (NMFS) and state funded fish habitat and screening projects.

1987-1991 – Oregon Department of Fish & Wildlife. Assistant Project Leader, Trout Creek Habitat Restoration Project

Duties

Conducted fish habitat surveys, recommended habitat restoration treatments, developed habitat restoration construction contracts, inspected construction contracts, negotiated landowner riparian leases, wrote landowner riparian leases., performed maintenance on riparian improvements such as riparian fencing and instream habitat structures.

Tom Nelson Assistant Project Leader ODFW 1.00

Education

1984 – 1989 Oregon State University; Corvallis, Oregon
Degree: B.S. Agricultural Resource Economics

1993 – 1994 Oregon State University; Corvallis, Oregon
1 year masters level fisheries coursework

Training

Northwest Fish Screening and Passage Workshops
Proper Functioning Condition Workshop
ODFW and USFS stream survey training

Experience

April 1997-Present, Oregon Department of Fish & Wildlife; Assistant Project Leader on Trout Creek Habitat Restoration Project

Duties

Fiscal management of project budgets, supervision of project personnel to implement and maintain fish habitat projects, preparation of proposals, works statements, contracts, leases, and reports, coordinates habitat work with private landowners, educates and informs private landowners as to best management practices in and along streams, coordination of habitat projects with other agencies and organizations performing conservation programs in the watershed. Identifies stream reaches with altered habitat conditions that lack necessary habitat types to sustain natural production of fish populations, determines appropriate fish habitat restoration/improvement actions, negotiates with government and private landowners for cooperation and permission to conduct habitat restoration projects, developed habitat restoration construction contracts, inspected construction contracts, performed maintenance on riparian improvements such as riparian fencing and instream habitat structures

April 1996- April 1997 Oregon Department of Fish & Wildlife Prineville District Acting Assistant District Fish Biologist and Restoration and Enhancement Coordinator.

Duties

Fiscal management of project budgets, preparation of proposals, contracts, and reports, coordinates habitat work with private landowners, educates and informs private landowners as to best management practices in and along streams, coordination of habitat projects with other agencies and organizations performing conservation programs in the watershed. Identifies stream reaches with altered habitat conditions that lack necessary habitat types to sustain natural production of fish populations, determines appropriate fish habitat restoration/improvement actions, negotiates with government and private landowners for cooperation and permission to conduct habitat restoration projects, conducted fish inventories, and evaluated fish stocking levels and timing on district waterbodies. Conducted and evaluated fish distribution, and population surveys.

April 1995 – April 1996 Oregon Department of Fish & Wildlife Restoration and Enhancement Coordinator.

Duties

Fiscal management of habitat project budgets, preparation of proposals, contracts, and reports, coordinates habitat work with private landowners, educates and informs private landowners as to best management practices in and along streams, coordination of habitat projects with other agencies and organizations performing conservation programs in the watershed. Identifies stream reaches with altered habitat conditions that lack necessary habitat types to sustain natural production of fish populations, determines appropriate fish habitat restoration/improvement actions, negotiates with government and private landowners for cooperation and permission to conduct habitat restoration projects.

May 1992 - November 1994 USFS Ochoco National Forest (seasonal) Fisheries Technician

Duties

Conducted, three different levels of stream surveys, analyzed, data and made recommendations. Conducted, supervised and analyzed data on a fish composition and density study on the North Fork of the Crooked River, Assisted OSU masters student on a redband/steelhead microhabitat utilization study.

Section 10. Information/technology transfer

No new technical information will be developed. If a monitoring program was funded from the start of the project there would have been some good information on what types of structures that achieved desired goals, and were durable, etc.. With this proposal we barely have the time to complete the operation and maintenance